Chapter 6  Topic and Relative Constructions

Chapter 4 discussed constructions derived by movement: the passive *bei* construction can be derived by movement of an NP to an argument position (short passives) or by movement of an operator to the peripheral non-argument position of an embedded clause (long passives). The former is an instance of A-movement and the latter, an instance of non-A or A’-movement. In the generative literature, there are many constructions that have been shown to be derived by A’-movement. They are typically labeled as “*wh*-movement” structures because they are well-represented by *wh*-interrogative constructions in English like (1a-b), which move *wh*-phrases to the clause-peripheral position.

(1) a. Who do you like?  
    b. I wonder who you like.

Many other constructions have been shown to behave like *wh*-interrogatives.\(^1\) An example is the construction containing a relative clause – the relative construction, illustrated below.

(2) the man who you like

In this example, the relative pronoun *who* originates in the object position of the relative clause and ends up in the peripheral position of the relative clause.

Another case is the construction containing a nominal phrase fronted to the beginning of a sentence --- topicalization.\(^2\)

\(^1\) See Chomsky (1977a), Browning (1987), among many others.

\(^2\)
(3) John, I like ti.

As A’-movement structures, topics and relative clauses share several properties with wh-constructions. The following are characteristics of A’-movement:

(4) a. A gap exists and has an A’-antecedent --- the peripheral wh-phrase in (1)-(2) or non-wh-phrase in (3).
   b. The antecedent-gap relation can cross multiple clause boundaries --- unbounded dependency.
   c. The dependency relation is sensitive to locality conditions such as Subjacency and the Condition on Extraction Domains.

(4b) is illustrated by the relative structure in (5a) and the topic structure in (5b) in English.

(5) a. This is the girl [whom, I think [that John believes that [Bill likes ti]]]
   b. That girl, I think that John believes that Bill likes.

(4c) is demonstrated by the unacceptability of the dependency relation crossing an ‘island’ (in the sense of Ross 1967), such as a complex NP island in (6), an adjunct island in (7), a subject island in (8) and a wh-island in (9):

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2 Other constructions that have been claimed to involve “wh-movement” or “A’-movement” are cleft structures, pseudo-clefts, comparatives etc. in English (see the references in note 1). It is not clear Chinese has a pseudo-cleft construction, distinct from a relative structure. Nor is it clear that A’-movement is involved in all these structures in Chinese. We leave these issues aside.
Complex NP island: no extraction from within a complex NP

(6) a. *the girl who, you bought [the books that criticize it]
   b. *that girl, you bought [the books that criticize it]

Adjunct island: no extraction from within an adjunct clause

(7) a. *the girl who, you got jealous [because I praised it]
   b. *that girl, you got jealous [because I praised it]

Subject island: no extraction from within a subject

(8) a. *the girl whom, you said [[that John likes it] is important].
   b. *that girl, you said [[that John likes it] is important].

Wh-island: no extraction from within an embedded wh-interrogative clause

(9) a. ?the gift which, you remember [where I bought it]³
   b. ?that gift, you remember [where I bought it]

That is, complex NPs, embedded wh-questions, subjects, and adjuncts all constitute islands out of which movement cannot take place. In Chomsky (1973, 1981) and subsequent works, the constraints against extraction from complex NPs and wh-islands are subsumed under the Subjacency Condition. In Huang (1982b), prohibitions of extraction from subject and adjunct phrases are accounted for by the

³ Violation of a wh-island is not as pronounced, so it has been called a ‘weak island’ (see Chomsky 1981, Cinque 1990, Rizzi 1990, for instance).
Condition on Extraction Domains (CED). According to the ‘diagnostics’ in (4), an antecedent-gap relation that may obtain over unbounded domains but is otherwise constrained by Subjacency and the CED is a relation of movement.

In addition to the null operator movement in passive constructions discussed in Chapter 4, Chinese has other A’-movement structures, such as wh-interrogative, topic and relative structures, illustrated by (10), (11) and (12) respectively:

(10) ni xihuan shei?
    you like who
    ‘who do you like?’

(11) yuyanxue, wo zui xihuan.
    linguistics I most like
    ‘Linguistics, I like the most.’

(12) [ni xihuan de [haizi]]
    you like DE child
    ‘the child that you like’

We will leave the wh-interrogative construction to the next chapter. It has been observed that topic structures are closely related to relative constructions: some have argued that when an element is relativized, it is derived from a topic position (see Kuno 1973, Jiang 1990). However, this is somewhat controversial (see Ning 1993). What, then, are the syntactic properties characterizing topic and
relative structures in Chinese? Section 6.1 will focus on the topic structure and Section 6.2 will focus on the relative structure.

### 6.1. Topic structures

Topic structures have been extensively investigated in the literature on Chinese grammar. Chinese has been claimed to be a topic-prominent language, in contrast to English, which is claimed to be subject-prominent (Li and Thompson 1976, 1981). What is a topic? Word order is a good clue. In addition to the typical SVO word order, Chinese allows variations of SOV and OSV.

**Canonical order:**

(13) **wo  hen     xihuan    yinyue. ---SVO**

* I      very    like         music

‘I like music.’

**Variations:**

(14) a. **wo      yinyue     hen      xihuan. ---SOV**

* I      music      very     like

‘I, music, like.’

b. **yinyue,    wo     hen     xihuan. ---OSV**

* music    I      very     like

‘Music, I like.’
The variations contrast with the canonical SVO order in several respects. For instance, the object in the SOV and OSV patterns (preverbal object) generally does not allow an indefinite non-specific expression, but the object of SVO (postverbal object) easily allows it:

(15) a. wo zai zhao yi-ben xiaoshuo.
    I at seek one-CL novel

    ‘I am looking for a novel.’

b. *wo yi-ben xiaoshuo zai zhao.
    I one-CL novel at seek

c. *yi-ben xiaoshuo, wo zai zhao.
    one-CL novel I at seek

Similarly, when a bare nominal appears preverbally, it generally is interpreted as definite.4

(16) a. shu, wo hui kan.
    book, I will read

    ‘The book(s), I will read.’

b. wo shu hui kan.
    I book will read

    ‘I, the book(s), will read.’

cf. c. wo hui kan shu.

4 A generic or kind interpretation (Carlson 1977, Krifka 1995) is also possible. See chapter 8 on the interpretation of different types of nominal expressions.
(16a-b) contrast with (16c). Only the latter allows the object shu ‘book’ to be interpreted as indefinite.

The preverbal and postverbal objects also differ in how they relate to other elements in the sentence. For example, a negative polarity item can be licensed by the sentential negation mei, when it occupies the object position in the SVO pattern, but not in the SOV or the OSV structure.

(17) a. ta mei xie shenme/renhe shu.
   he not write what/any book

   ‘He did not write any book.’

   b. *ta shenme/renhe shu mei xie.5
   he what/any book not write

   c. *shenme/renhe shu, ta mei xie.
   what/any book he not write

Although SOV and OSV patterns share properties that distinguish them from the SVO construction, the two are not identical. The object in the SOV structure requires a contrastive or focus interpretation, but the one in the OSV structure does not (cf. Ernst and Wang 1995, Lu 1994, Qu 1994, Shyu 1995). This contrast is illustrated below:

5 The sentences in (17b) and (17c) are acceptable if the adverb dou or ye occurs after the subject. Dou and ye license the negative polarity item to their left.
(18) ta  Zhang  xiaojie,  bu  xihuan  t.\textsuperscript{6}

him  Zhang  Miss  not  like

‘Miss Zhang does not like him.’

‘??He does not like Miss Zhang.’

The contrastive interpretation is clearer with a clause highlighting the contrastive usage of the preposed object, as in (19):

(19) Q: ta  hui  zhui  Zhang  xiaojie  ma?

he  will  court  Zhang  Miss  Q

‘Will he court Miss Zhang?’

A: ta  Zhang  xiaojie,  bu  xiang  zhui  t,  Li  xiaojie,  cai  hui  zhui  t

he  Zhang  Miss  not  want  court  Li  Miss  only  will  court

‘He does not want to court Miss Zhang; (he) only will court Miss Li.’

\textsuperscript{6} When the object is an inanimate expression, such as in (i), the SOV order does not require a contrastive interpretation (however, see Tsai 1994a, p. 138, for the claim that the object in SOV must be contrastive):

(i) ni  gongke  zuo-le  t,  ma?

you  homework  do-le  Q

‘Did you do homework?’

A “no-ambiguity” constraint may play a role. As noted by Tsao (1977), Qu (1994) and Shyu (1995), if the two NPs can switch theta-roles and make good sentences, [NP1 NP2 V] is always interpreted as OSV, not SOV. The latter is possible only when the object is used contrastively. If they cannot switch theta-roles (e.g., *shu hen xihuan wo ‘the book likes me’), the SOV order is acceptable without a contrastive interpretation.
SOV and OSV structures also have different syntactic properties. For instance, only OSV, not SOV, allows a coindexed pronoun in the postverbal object position:

(20) a. *wo Zhang xiaojie_i bu xiang zhu ta_i, Li xiaojie_j cai hui zhu ta_j

I Zhang Miss not want court her Li Miss only will court her

cf. b. Zhang xiaojie_i, wo bu xiang zhu ta_i

Zhang Miss I not want court her

‘Miss Zhang, I don't want to court her.’

Furthermore, only the OSV order allows the object to move across a tensed-clause boundary.

(21) *ni shu_i renwei ta kan-wan-le t_i ma?

you book think he read-finish-LE Q

‘Lit: Do you, the book, think he finished reading (intended to mean

Do you think he finished reading the book?)’

(22) shu_i, ni renwei ta kan-wan-le t_i ma?

book you think he read-finish-LE Q

‘The book, do you think he finished reading?’

These differences, as suggested by Qu (1994) and Shyu (1995), among others, can be accounted for if the SOV structure is derived by A-movement and the OSV structure, A’-movement. A-movement is
generally limited within the minimal domain containing a subject, whereas A’-movement allows long-distance operations (cf. the short and long-distance passives in Chapter 4). The SOV construction has generally been regarded as a contrastive or a focus structure and OSV as a topic structure. What follows will concentrate on the topic structure.

In general, a topic structure refers to a sentence that has a phrase “preposed” to the position before the subject [XP + Subject…]. The use of the term “preposed” is suggestive of movement. However, this is a point of contention in the literature. We turn to the properties of topic structures below.

6.1.1. Movement or not?

There has been considerable debate on whether topic structures are derived by movement. The controversy concerns the relevance of the locality conditions governing movement constructions to topic structures. Another point of contention is whether topic structures need to be derived in two different ways: base-generation and movement.

First, consider the issue of whether both movement and base-generation are necessary to derive topic structures. As has often been observed, there are topics not related to a gap in the clause. Examples like the following ones do not contain a gap (see Chao 1968, Li and Thompson 1976 and 1981, Tang 1979, Teng 1974, Tsao 1977, among many others):

(23) nei-chang huo, xingkui xiaofangdui lai de kuai.

that-CL fire fortunately fire-brigade come DE fast

‘(As for) that fire, fortunately the fire brigade came fast.’
There have been two views regarding such “gapless” topic structures. One view takes these sentences as evidence for the existence of base-generated topic structures, as opposed to topic structures derived by movement (making a distinction between discourse topics and contrastive topics; see Tsai 1994a, for instance). The alternative to having two ways of deriving topic structures is to adopt a movement approach for all topic structures and claim that sentences like (23)-(24) are derived by movement and subsequent deletion (see Shi 1992). Take (24) for example. It might be derived from something like (25) below:

(25) shuiguo, wo zui xihuan [(shuiguo zhong de) xiangjiao].
    fruit    I    most    like    fruit    among    DE    banana

    ‘(As for) fruits, I like bananas (among fruits) most.’

The topic shuiguo ‘fruit’ is moved from within the nominal expression containing xiangjiao ‘banana’ and the parenthesized phrase is then elided. However, it is doubtful that such a movement from within a nominal expression is available in Chinese. If it were available, a sentence like (26) should be acceptable, contrary to fact.

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7 There are many works on East Asian languages arguing for the base-generation of topic and relative constructions based on “gapless” structures. See, among others, Hoji (1985), Saito (1985), Ishii (1991), Murasugi (1991, 2000a,b).
(26) *Zhangsan, wo zui xihuan [(Zhangsan de) baba].

Zhangsan I most like Zhangsan DE father

Moreover, the topic and the relevant nominal expression in (25) can be separated by island boundaries (see further discussion later in this chapter and next chapter).\(^8\)

(27) shuiguo, wo zui xihuan [[bu pa chi xiangjiao de] ren].

fruit I most like not afraid eat banana DE person

‘(As for) fruits, I like the most the people who are not afraid to eat bananas.’

Accordingly, we adopt a base-generation approach to the “gapless” topic structures in (24)-(25). A gapless topic construction is interpreted according to an “aboutness” relation: the comment clause is about the topic.

When base-generation is possible, it is tempting to conclude that all topic structures in Chinese are generated in the same manner. That is, all topic structures are instances of an “aboutness” relation and no movement ever applies. However, such a claim is neither logically necessary nor empirically supported. Consider the sentences below:

\(^8\) The acceptability of (27) indicates that the whole-part relation between ‘fruits’ and ‘bananas’ can be established without a gap of the whole at a position adjacent to the part. This contrasts with the inalienable possession relation between ‘Zhangsan’ and ‘father’ in (26). There must be a gap adjacent to ‘father’ coindexed with ‘Zhangsan’. (26) is ruled out by the impossibility of the gap coindexed with ‘Zhangsan’ according to the identification rules applying to empty pronouns.
(28) a. Zhangsan, ta zou-le.

Zhangsan he leave-LE

‘Zhangsan, he left.’

b. *Zhangsan, ta bu renshi.

Zhangsan he not know

*Zhangsan, he doesn't know.

In (28a), the pronoun *he* may be understood to be coreferential with the topic, but in (28b) the coreference relation is not allowed. If all topic structures are base-generated and do not contain gaps (empty categories), the difference in interpretation between these sentences is not easily captured. Note that the ungrammaticality of (28b) is related to the fact that the pronoun *ta* cannot be coindexed with Zhangsan in (29):

(29) *ta bu renshi Zhangsan.

he not know Zhangsan

‘He, doesn't know Zhangsan.’

A theory that postulates movement in the derivation of (28b) from something like (29) can easily capture the facts in (28). The ill-formedness of (28b) follows from whatever principle also rules out the relevant interpretation in the source structure (29), such as one of the Binding Principles (Chomsky 1981):⁹

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⁹ For more discussions on the Binding Principles, see chapter 9.
(30) a. An anaphor is bound in its governing category.
   b. A pronominal is free in its governing category.
   c. An R-expression is free.

In particular, because *Zhangsan* in (29) is a referential expression, by Principle C in (30c) it must not be A-bound or coindexed with a c-commanding NP in an A-position. But in (29) *Zhangsan* is A-bound by the subject *ta*; the sentence is ruled out by Principle C. (28b) can be ruled out in the same way, if it is assumed that *Zhangsan* is put back (reconstructed) in the object position from which it originates. Alternatively, we may seek explanation from a property of the empty category in the object position, represented in (31). It is a variable bound by an A’-element (the topic). A variable is also an R-expression and subject to Binding Principle C. It therefore cannot be A-bound:

(31) *Zhangsan_i, ta_i bu renshi e_i.

  Zhangsan  he  not  know

Similarly, the contrast below can be accounted for by the fact that (32b) but not (32a) contains an empty category coindexed with both the topic and the subject *ta*:

(32) a. Zhangsan_i, ta_i shuo Lisi zou-le.

  Zhangsan  he  say  Lisi  leave-LE

  ‘Zhangsan, he said that Lisi left.’

b.*Zhangsan_i, ta_i shuo Lisi kanjian-le e_i.
Zhangsan he say Lisi see-LE

‘*Zhangsan, he said that Lisi saw e.’

(32b) is ruled out, again by Principle C, on par with (33) and the cases involving ‘strong crossover’ like (34):

(33) *ta shuo Lisi kanjian-le Zhangsan.

he say Lisi see-LE Zhangsan

‘*He said that Lisi saw Zhangsan.’

(34) *Who did he say that I saw t?

A different kind of contrast points to the same conclusion:

(35) a. *ziji-de shu, Zhangsan dou shui-zhao-le.

self’s book Zhangsan even fall-asleep-LE

‘*Self’s book, even Zhangsan fell asleep.’

b. [ziji-de shu], Zhangsan bu xiang kan e.

self’s book Zhangsan not want read

‘His own book, Zhangsan did not want to read.’
(35a) is ill-formed because the reflexive anaphor ziji ‘self’ is not bound within its governing category in accordance with Principle A of Binding Theory (30a).\(^{10}\) (35b), on the other hand, exhibits the “reconstruction effect.” Although ziji is not c-commanded by Zhangsan in this sentence, it can be placed back in the gap and interpreted accordingly. Alternatively, the fact that the topic containing ziji is coindexed with an empty category c-commanded by Zhangsan allows us to count the anaphor as being “bound” in some extended sense. It can satisfy Principle A without being placed back in the object position. This is the notion of 'chain-binding' proposed in Barss (1986). The preposed topic and its original object position form a chain. As long as a member in the chain containing an anaphor is c-commanded by an A-element, this A-element can bind the anaphor.

Alternatively, we may also claim that the anaphor is put back into the object position (reconstructed). There are many interesting works in the literature debating the merits of “chain-binding” and “reconstruction.” We will not discuss them here, except to note a one-way implication: if reconstruction (chain binding) is possible, movement must have taken place.

Taking reconstruction effects as a test, we may conclude that (36a), in contrast to (36b), is derived by movement. The two differ minimally in the use of an overt pronoun:

(36) a. [ziji-de baba], Zhang xiaojie\_ hen zunzhong t\_.

\(^{10}\) The ill-formedness of (35a) cannot be attributed to a violation of the 'aboutness requirement.' In talking about an extremely boring book, the following sentence, where the topic does not contain the anaphor ziji, is well-formed:

(i) nei-ben shu, Zhangsan dou shui-zhao-le.

that-CL book Zhangsan even fall-asleep-LE

‘s(As for) that book, Zhangsan is about to fall asleep.’
self’s father Zhang Miss very respect

‘Self's father, Miss Zhang respects (him).’

b. *[zijí-de baba]i, Zhang xiaojie j hen zunzhong ta,.

self’s father Zhang Miss very respect him

‘Self's father, Miss Zhang respects him.’

Other reconstruction effects can be demonstrated. For instance, an idiom is regarded as one unit in the lexicon. If some part of an idiom is separated from the rest of it, movement must have applied: the moved part should be reconstructed back to become one unit with the rest of the idiom. Topic structures show such reconstruction effects:

(37) a. zhe zhong cu, ni qianwan chi-bu-de.

this kind vinegar you certainly eat-not-obtain

‘Lit: This kind of vinegar, you definitely should not eat.’

‘You definitely should not be jealous of this.’

b. ta-de dao, wo bu-gan kai.

his knife I not-dare open

‘Lit: His knife, I dare not open.’

‘I dare not operate on him.’

In short, the contrasts illustrated above show that topic structures involve movement. A non-movement approach to all topic structures, represented by Li and Thompson (1976), cannot be adopted.
The contrasts demonstrated here also argue against the views of Xu and Langendoen (1985) and Xu (1986). Xu and Langendoen agree with Li and Thompson and argue that Chinese topic structures are not formed by movement at all. Unlike Li and Thompson, who do not postulate the existence of gaps, Xu (1986) advocates for the view that a sentence like (28b) above does contain an empty category. Nonetheless, the empty category is a ‘free empty category’ (FEC). It may be freely interpreted as an anaphor, a pronominal, or an R-expression (variable) as long as the ‘aboutness requirement’ and other Gricean principles of cooperation are met. Thus, according to Xu (1986), (28b) should be well-formed because it contains an object FEC, which, if coindexed with the subject ta, can be admitted as an anaphor. (32b) should be well-formed because the object FEC can be coindexed with ta and interpreted as a pronominal. In other words, (28b) and (32b) should be as good as their (a) counterparts and as good as the sentences below:

(38) Zhangsan, ta Renshi ziji.

Zhangsan he know self

‘Zhangsan, he knows himself.’

(39) Zhangsan, ta shuo Lisi bu renshi ta.

Zhangsan he say Lisi not know he

‘Zhangsan, he said that Lisi didn't know him.’

The unacceptability of (28b) and (32b) suggests that the FEC analysis is not adequate.

In brief, not all topic structures are derived in the same manner. Some topics are derived by movement and related to gaps in the comment clause. Some other topics are not associated with any
gaps, and are interpreted according to an “aboutness” relation. Movement derives the former and base-generation, the latter.

If the topic structure containing a gap is derived by movement, we should expect the distribution of gaps to be sensitive to the locality conditions on movement. More generally, topic structures with gaps should exhibit the properties listed in (4). The facts are largely as predicted. Exceptions are due to the possibility of base-generating an empty pronoun in certain contexts, as shown next.

6.1.2 Island conditions

To begin with, note that, as in (4b) (an unbounded antecedent-gap relation), it is possible to topicalize an element that is deeply embedded in a complement clause:

(40) Zhangsan, wo zhidao Lisi juede nimen dou hui xihuan e_i.

Zhangsan I know Lisi feel you all will like

‘Zhangsan, I know that Lisi feels that you will all like.’

However, extraction is not possible from within islands listed in (4c). One such extraction-blocking domain is the complex NP island shown in (41) below.

(41) a. Lisi, wo renshi [henduo [(*ta_i) xihuan] de] ren]].

Lisi I know many he like DE person

‘Lisi_i, I know many people who *(he) likes.’
b. *Lisi, [wo hen xihuan [[*(ta_i) chang ge] de] shengyin]].

   Lisi I very like he sing song DE voice

   ‘Lisi, I like the voice with which *(he) sings.’

These sentences become acceptable if the gap [e_i] is replaced by a resumptive pronoun, indicating that the ill-formed sentences are not semantically or pragmatically anomalous. The reason for the ill-formedness of (41a-b) is a bona fide instance of island violation --- it is an effect of Ross’ (1967) Complex NP Constraint (CNPC), a special case of Chomsky’s Subjacency.

That topicalization in Chinese is constrained by the CNPC has been noted by a number of linguists (see, among many others, Tang 1977). This is expected, of course, if topicalization is derived by movement when a gap occurs. In fact, we predict that other island constraints, including the CED, which subsumes the Adjunct Condition (AC) and the Subject Condition (SC), and the Left Branch Condition (LBC) which prohibits extraction from the left branch, should all apply in Chinese as well. The prediction is borne out for the LBC and AC:

Left Branch Condition (LBC).

(42) *Zhangsan_i, wo kanjian-le [e_i baba].

   Zhangsan I see-LE father

   ‘Zhangsan_i, I saw [his_i] father.’

Adjunct Condition (AC):

(43) *Lisi_i, zhe-jian shi [gen e_i mei lai] mei you guanxi.
Lisi this-cl matter with not come not have relation
‘Lisi, this matter is not related to [his] not having come.’

Regarding the Subject Condition (SC), although some previous studies have shown that extraction out of a sentential subject may lead to ungrammatical strings (see Huang 1982b, Paris 1979, Tang 1977), it is actually not difficult to find acceptable examples that violate the SC (see Huang 1982b, 1984a):

(44) zhe-ge xuesheng, [ei qu canjia zhe-ge bisai] zui heshi].
    this-cl student go participate this-cl competition most appropriate
‘This student, for [him] to participate in this competition is most appropriate.’

The LBC seems also violated in some cases:

(45) Zhangsan, [e baba hen youqian].
    Zhangsan father very rich
‘Zhangsan, [his] father is rich.’

In fact, other islands also seem violable. The following sentences apparently violate the CNPC and AC, but are perfectly acceptable:

(46) Zhangsan, [ei xihuan de ren] hen duo.
    Zhangsan like de person very many
‘Zhangsan, people who [he] likes are many.’
(47) Lisi, yinwei e_i piping-le Zhangsan, (suoyi) meiren yao ta.

Lisi because criticize-le Zhangsan so nobody want him

‘(As for) Lisi, because [he] criticized Zhangsan, nobody wants him.’

More generally, island effects seem to be nullified when a given island occurs in a subject or pre-subject position. Why are there these exceptions? Huang (1984a and subsequent works) shows that an important difference between Chinese and English lies in which empty pronoun (pro or PRO) is available.\(^\text{11}\) Chinese allows an empty pronoun in all argument positions (pro), in contrast to English, which only allows an empty pronoun in a Caseless position (PRO, such as the subject of an infinitival clause). The distribution of a pro or a PRO is governed in part a Generalized Control Rule, generalizing the control rule for the reference of PRO in English:

(48) The Generalized Control Rule (GCR):

An empty pronoun is coindexed with the closest potential antecedent.

The apparent island violations in the cases discussed above can be solved in the following way. Assuming that the GCR may coindex an empty pronoun with either an antecedent in an A-position or with one in an A’-position, all the apparent island violations can be shown to arise from the independent possibility of having a pro properly coindexed with an A’-binder in accordance with the GCR in Chinese, i.e., from the possibility of using pro as a resumptive pronoun in this language.

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\(^{11}\) Generally, a PRO is in a position not assigned Case while pro appears in a position that is assigned Case. In the framework of Government and Binding (Chomsky 1981), pro, not PRO, can be in a governed position.
Because the GCR only looks for the closest antecedent and, unlike movement, is not subject to Subjacency, the CED, or other island constraints, no real violation of these constraints has occurred.

To illustrate, consider an example in which topicalization out of a complex NP appears possible. In particular, consider the contrast below:

(49) a. Lisi, [[e₁ chang ge de] shengyin] hen haoting.
   Lisi sing song DE voice very good
   ‘Lisi, the voice with which [he] sings is very good.’

   b. *Lisi, wo hen xihuan [[e₁ chang ge de] shengyin].
      Lisi I very like sing song DE voice
      ‘Lisi, I like the voice with which e₁ sings.’

In each case above, the binding relationship between the empty category [e] and the topic cannot be established by movement, because the process of movement involved would violate Subjacency. However, Chinese allows a pro; such an empty category may be base-generated. Its reference is determined by the GCR. The nominal phrase minimally c-commanding the empty category is the topic in (49a), so by the GCR the pro is coindexed with the topic, and we have a case of a topic properly binding a pro within a complex NP. Because the GCR is subject only to the notion of "closest" but not to island constraints, the binding relation does not violate any principle of grammar. The empty category is admitted in (49a) not as a trace of movement, but as a pro --- an empty resumptive pronoun.

Now consider (49b). Because of Subjacency, the empty category cannot be created as a trace by movement. It can be base-generated as a pro. The GCR does not allow its coindexation with the
topic, however. The closest antecedent c-commanding the empty category is the subject wo 'I' of the comment clause, not the topic Lisi. Because the empty category cannot be related to the topic, either as a trace or as a pro, the sentence is ill-formed under the intended reading. More specifically, the sentence is acceptable, but only under the interpretation ‘(As for) Lisi, I like my own voice of singing’.

The GCR correctly predicts that an element may be topicalized out of a complex NP if the complex NP occurs in subject position, but not if it occurs in object position. It also correctly captures the fact that, if an object complex NP is preposed before the subject, extraction from the complex NP becomes possible.

Similarly, the GCR also accounts for the asymmetry we saw earlier with respect to the LBC and the AC. Nor is it surprising that the subject of a sentential subject can be topicalized. We will not elaborate on the details here. Readers are referred to Huang (1984a).

The only problem left is why it is possible to extract not only a subject but also an object out of a clause-initial island, such as the sentences in (44) and (46), and also in (50a-b) below:

(50) a. zhe-ge xiaohai, [[Lisi zhaogu e] zui heshi].
    this-CL child Lisi care most appropriate
    ‘This child, that Lisi takes care of [him] is most appropriate.’

b. Zhangsan, [[e piping e de ren] hen duo].
    Zhangsan criticize DE person very many
    ‘Zhangsan, people who criticize [him] are many.’
Huang suggests that topicalization of the object has applied first within the embedded clause, resulting in a pro occurring at the peripheral position of the sentential subject. This can be schematically represented below:

\[
(51) \text{Topic}_i, \quad [_{\text{Clause}} \quad [_{\text{Subject}} \quad \text{pro}_i \ldots t_i] \ldots ] \quad \text{GCR} \quad \text{Move}
\]

The additional mechanism creates new challenges, which are addressed in A. Li (2007). Nonetheless, island effects are indeed relevant to topic structures. Topic structures can be derived by base generation or movement. The latter is sensitive to island conditions. What appears to be an island violation actually involves a pro, which is identified with the Topic by the GCR. The relevance of island conditions on all topic structures containing gaps also argues against a clear-cut distinction between a discourse topic structure being derived by base-generation and a contrastive topic structure being derived by movement. Regardless of interpretative possibilities, what matters is the presence or the absence of an empty category and the nature of the empty category (trace or pro).\(^1\)

\(^{12}\) A distinction has been made by some linguists concerning the O of OSV as a discourse topic or a contrastive topic (Tsai 1994a, Shyu 1995, for instance. See Hoji 1985 for Japanese topic structures). The former is base-generated and the latter is derived by movement. Because of the possibility of movement, a contrastive topic can be an indefinite expression, in contrast to a definite discourse topic. An indefinite contrastive topic is illustrated by sentences such as (i) below (Tsai 1994a, p. 138, example (31b)).

(i) yi-pian lunwen, we hai keyi yingfu. (liang-pian, na jiu tai duo le.)

‘One paper, I can still handle. (Two papers, that’s too much.)’
The study of topic structures strengthens the claim in the generative grammatical theory that movement is sensitive to island conditions. In turn, island conditions can be taken as diagnostics for movement. Moreover, as shown earlier, “reconstruction effects” also help to identify movement. If a structure exhibits reconstruction effects, movement must have taken place. These properties of islandhood and reconstruction are further illustrated by the relative construction, which is usually associated with topicalization. We turn to relative structures next.

6.2 Relative structures

Topic and relative structures have generally been understood as sharing many properties. Both constructions belong to the group of structures subsumed under wh-constructions, as mentioned at the beginning of this chapter. To capture the similarity between topic and relative structures, Kuno (1976) proposed the ‘Thematic Constraint,’ according to which a relative clause construction is well-formed just in case there is a corresponding well-formed topic structure, in which the head modified by the relative clause is used as the topic and the relative clause as a comment about the topic. In the same spirit, Tang (1979) proposed that in the formation of a relativized construction in Chinese, an argument is first topicalized within the relative clause. The relativized argument is always a topic in the relative clause. Jiang (1990) made the same claim. Nevertheless, there are important differences between topicalization and relativization that cannot be captured under this hypothesis. Some topic structures are acceptable without corresponding relative structures and vice versa.

It is not clear, however, this is an indefinite expression. A. Li (1998) suggests that ‘one paper’ may be analyzed as a quantity expression. A quantity expression can be regarded as a definite expression or irrelevant to the definiteness requirement. See Chapter 8 and A. Li (1998) for the distinction between a quantity-denoting expression and an individual-denoting expression.
We saw in the previous section that a topic structure in Chinese does not require an element in the comment clause be coindexed with the topic; there are sentences such as those in (23)-(24) licensed by an ‘aboutness relation’ that holds between the topic and comment. However, such an aboutness relation is not sufficient to license a relative construction:

(52) *[[ xingkui xiaofangdui lai de kuai de] nei-chang huo]
    fortunately fire-brigade come DE fast DE that-CL fire
    ‘the fire such that fortunately the fire brigade came fast’

(53) *[[ wo zui xihuan xiangjiao de] shuigu]
    I most like banana DE fruit
    ‘the fruit such that I like bananas’

This contrast between topic and relative structures can be further illustrated below. The verb fasheng 'happen' has both an unaccusative and a transitive use. (54) illustrates the unaccusative use with one argument (Theme), and (55), the transitive use with an additional argument (Experiencer):

(54) yiwai fasheng-le.
    accident happen-LE
    ‘An accident happened.’

(55) tamen fasheng-le yiwai le.
    they happen-LE accident LE
‘They had an accident.’

Both (54) and (55) may occur in a topic construction:

(56) tamen,    yiwai    fasheng-le.
     they    accident    happen-LE

‘(As for) them, an accident happened.’

(57) tameni,  e;  fasheng-le    yiwai    le.
     they    happen-LE    accident    LE

‘As 'for them, they had an accident.’

However, only (57), not (56), has a well-formed relativized counterpart:

(58) *[[yiwai    fasheng-le    de]    neixie    ren]
     accident    happen-LE    DE    those    person

‘the people such that an accident happened’

(59) [[e;    fasheng-le    yiwai    de]    neixie    ren,]
     happen-LE    accident    DE    those    person

‘the people who had an accident.’

Were a topic structure the source of relativization, (56) and (58) should not differ in acceptability.
In other respects, a relativized construct may be well-formed even though its corresponding topic structure is not. For example, although an adjunct can be relativized, it often cannot be used as a topic (Ning 1993).

(60) a. [ta chang ge de shengyin] hen hao ting.
    he sing song DE voice very good hear
    ‘The voice with which he sings is nice to listen to.’

b. *nei-ge shengyin, ta chang ge.
    that-CL voice he sing song

(61) a. [ta duidai Lisi de fangshi] hen bu hao.
    he treat Lisi DE style very not good
    ‘The manner in which he treated Lisi is very bad.’

b. *zhei-ge fangshi, ta duidai Lisi.
    this-CL manner he treat Lisi

(62) a. ta xiu che de chechang
    he fix car DE garage
    ‘the garage where he fixed cars.’

b. *zhe chechang, ta bu xiu che.
    this garage he not fix car
    ‘This garage, he does not fix cars.’
Thus, the well-formedness of a topic structure is neither necessary nor sufficient for the acceptability of a corresponding relative structure, suggesting that relative clause structures are not derived from topic structures. If this is the case, what is a relativized phrase and what is the process of relativization? We turn to these questions next.

6.2.1. Distribution and interpretation
A nominal phrase has specific constituents and certain ordering requirements. While Chapter 8 will focus on the internal structure of nominal expressions, this section will sketch the basics in order to lay the groundwork for the discussion on relative constructions.

The basic component of a nominal phrase is a noun, such as mao ‘cat.’ A noun can appear with a number to express quantity. In Chinese, the presence of a number requires a classifier to specify the unit with which the entity denoted by the noun is counted or measured. A demonstrative (and other words that are in complementary distribution with demonstratives, such as the quantifier mei ‘every’) may occur before the number. The order of these constituents can be summarized in (65):

(65) Demonstrative + Number + Classifier + Noun  
    zhe/na yi/san zhi/bei mao/shui  
    this/that one/three CL/cup cat/water  
    ‘this/that (one) cat; these/those three cups of water’

A relative clause may appear in the positions indicated by the roman numerals I-III in (66), illustrated by the examples in (67a-c) respectively.

(66) Demonstrative + Number + Classifier + Noun  
    I II III
(67) a. [[ta xihuan de] na (yi)-ge haizi]$^{13}$

   he like DE that one-CL child

   ‘the child that he likes’

b. [ zhe [Zhangsan shuo chulai de] yi-ju hua] bi

   this Zhangsan speak out DE one-CL word compare


   that Lisi write out DE one.hundred-CL word more have use

   ‘This one sentence that Zhangsan uttered is even more useful than those hundred sentences

   that Lisi wrote.’

c. [na (yi)-ge [ta xihuan de] haizi]

   that one-CL he like DE child

   ‘the child that he likes’

As indicated by the more complex example in (67b), position II (between a demonstrative and a

number) is not the most natural position for a relative clause. We put this aside (see Lu 1998). The

contrast between I and III, illustrated by (67a) and (67c), has been extensively discussed in the

literature, including the cases when the demonstrative does not appear, as in (68).

(68)   Number + Classifier + Noun

   I                      III

$^{13}$ We have seen quite a few examples of classifiers in the previous chapters and always put a hyphen before a classifier.

This is because a classifier and the preceding number form a phonological unit. A classifier is like a clitic or part of a

compound consisting of number and a classifier.
The distinction between these two positions for relatives has been cast in various ways in the literature. The relative occurring in position I is “restrictive” and the one in position III is “non-restrictive” (see, for instance, Chao 1968, Hashimoto 1971, Huang 1982b). Del Gobbo (2003) extensively discusses the differences between restrictive and non-restrictive (also known as appositive) relatives. Some of them are repeated below.

(69) a. In terms of categories, the antecedent of an appositive can be any maximal projection (Sells 1985, among others).

b. Sentential adverbs of modification can appear only inside appositives, not inside restrictives (Ogle 1974).

c. A quantified NP cannot be the antecedent of an appositive (Ross 1967).

d. No quantifier in the matrix clause can have scope over a pronoun in the appositive clause (Safir 1986).

e. Appositives are affected by the presence of negation in the main clause (Demirdache 1991).14

She shows that the so-called non-restrictive relative in Chinese is not like an appositive in English. It actually behaves like a restrictive in English. For lack of space, we will not repeat all the arguments and examples, except for sketching some of the points listed above with a few illustrations.

Consider (69c). The elements modified by quantifiers such as every, any, and no cannot usually serve as antecedents of an appositive clause; the following example is from Ross (1967):

14 More specifically, if a noun is modified by an appositive, it cannot be in the scope of a negation in the matrix clause.
(70)  a. Every student that wears socks is a swinger.

        b. *Every student, who wears socks, is a swinger.  (Ross 1967)

In Chinese no difference arises if the relative clause is in position I or III, as pointed out by Lin (1997):

(71)  a.  [mei yi-ge \( \text{op}\) chuan wazi de xuesheng] ] dou shi tiaowu de.
        every one-CL. wear socks DE student all be dancers DE
        ‘Every student who wears socks is a dancer.’

        b.  [\( \text{op}\) chuan wazi de [mei yi-ge xuesheng]] ] dou shi tiaowu de.
            wear socks DE every one-CL student all are dancers DE
            ‘Every student who wears socks is a dancer.’

(69d) prohibits a quantifier in the matrix clause from binding a pronoun in the appositive clause:

(72)  a. *Every Christian, forgives John, who harms himi.

        b.  Every Christian, forgives a man who harms himi.  (Safir 1986:672)

Again, according to Del Gobbo, such binding possibilities are demonstrated in both types of relatives in Chinese.

(73)  a.  [mei yi-ge xuesheng]i dou yuanliang naxie [cengjing shanghai tameni
        every one-CL student all forgive those formerly harm them
        de] ren.
DE people
‘Every student forgives those who have harmed him before.’

b. [mei yi-ge xuesheng], dou yuanliang [ce nijing shanghai tamen, de]
every one-CL student all forgive formerly harm them DE
naxie ren.
those people
‘Every student forgives those who have harmed him before.’

Finally, consider (69e). Demirdache (1991), following Sells (1985), points out that appositives -- but not restrictive relatives -- are affected by the presence of negation in the main clause. No phrase modified by an appositive can be in the scope of a negative marker in the matrix clause:

(74) *Every rice-grower in Korea doesn’t own a wooden cart, which he uses when he
harvests the crop.

Chinese behaves differently, regardless of where a relative clause is:

(75) a. mei-ge nongfu dou mei-you yi-liang [yong-lai shouge de] chezi.
Every-CL farmer all not-have one-CL use-for harvest DE cart
‘Every farmer doesn’t have a cart that he uses for harvesting.’

every-CL farmer all not-have use-for harvest DE one-CL cart
The relative in position III, as in (75a) is quite acceptable. The unacceptability of (75b) has to do with the fact that a modifier in position I of (68) (before the number, without a demonstrative) makes the expression specific or definite.\(^{15}\)

In brief, relatives in position I and III are not equivalents of English restrictive and appositive (non-restrictive) clauses. According to Del Gobbo, citing Huang (1982b), a more appropriate distinction can be made in terms of modification scope: a relative clause modifies what follows it (the scope of modification is the elements to the right of the modifier). A relative in position I modifies 

\[(\text{Demonstrative}) + \text{Number} + \text{Classifier} + \text{Noun}]\; \text{; a relative in position III modifies [Noun].}\(^{16}\) The demonstratives in these two patterns function differently. In the pattern \[\text{Demonstrative} + \text{Number} + \text{Classifier} + \text{Relative} + \text{Noun} \], the demonstrative is a deictic expression. It refers to a designated definite entity (‘this one’, ‘that one’). The said entity has the property expressed by the relative. In

\(^{15}\) The terms of “strong” and “weak” quantifiers are used by Del Gobbo. Weak quantifiers have a non-specific interpretation. Strong quantifiers (\textit{every, all}) and expressions with a demonstrative (definite expressions) do not occur in contexts where a specific or definite expression is disallowed. An existential sentence is such a case:

(i) *you meigeren/na-ge ren/zai nian shu de san-ge ren zai zher.

\hspace{1cm} \text{have everyone/that-CL person/at read book DE three-CL person at here}

\hspace{1cm} ‘There was everyone/that person/the person that was reading at this place.’

\(^{16}\) Stacking of modifiers makes some relatives in position III modify [Modifier + Noun], not simply a noun.
the pattern [Relative + Demonstrative + Number + Classifier + Noun], the demonstrative is an “anaphoric” expression. It is identified by the preceding relative. This distinction can also be understood in terms of a descriptive vs. identificational/referential use of the relative, as proposed by Lu (1998). Lu notes that position I (his pre-Q) modifiers help identify the referent of a nominal expression), and position III (his post-Q) modifiers contribute to the description of the property.

To capture the fact that a modifier modifies the elements to its right, Huang (1982b) proposes a modification structure in Chinese like the one below, with Mod modifying its sister constituent:

(76)

The XP can be a nominal phrase – NP. A modifier is “adjoined” to N’ (an adjoined element is neither a specifier nor a complement). N’ can be repeated as many times as the number of modifiers. Although the theoretical framework and the conceptions of nominal structures change over time (see Chapter 8), the insight of such an adjunction structure and the scope of modification remain, as we see in the following sections on the structure and derivation of relatives.

6.2.2. Movement

Do relatives behave like topic structures with regard to movement? It has been argued in Chiu (1995) that the morpheme suo in Chinese relatives is an indication of movement. Specifically, suo occurs only when the object of a verb (accusative object) is relativized. The object position must be empty.
The following examples illustrate this generalization. Only (77), which relativizes an accusative object, is acceptable with *suo*. The sentences in (78)-(92) do not relativize an accusative object and do not accept *suo* (Examples are from Chiu 1995, 78-81).

(77) [Lisi (*suo) mai __ de] neixie shu ---accusative object relativization

Lisi SUO buy DE those book
‘the books that Lisi bought’

(78) [___ (*suo) lai-guo de] neixie ren ---subject relativization

SUO come-GUO DE those people
‘those people who came’

(79) [Lisi (*suo) gen ta zhu-guo de] neige ren ---object of P

Lisi SUO with him live-GUO DE that-CL person
‘the person that Lisi lived with’

(80) a. Lisi (*suo) kandao Zhangsan ___ de] difang ---where

Lisi SUO see Zhangsan DE place
‘the place where Lisi saw Zhangsan’

b. Lisi (*suo) kandao Zhangsan ___ de] shihou ---when

Lisi SUO see Zhangsan DE time
‘the time when Lisi saw Zhangsan’
In addition, a pronoun in place of the gap in the object position makes *suo* unacceptable.

(81) [wo *suo* kanguo (*ta) de] neige ren

I *suo* see-GUO him DE that-CL person

‘the person that I saw (him)’

These examples show that relatives are like topic structures: movement applies and derives a gap. The appearance of a pronoun indicates the absence of movement. *Suo* is a clue to relativizing an accusative object by movement. The postverbal object position (where an accusative object is) must be empty when *suo*, referred to as an object clitic by Chiu, appears before the verb.

In what follows, we will show that relativization, even in the cases without *suo*, is indeed derived by movement when the relativized position is a gap. If a pronoun appears, movement has not taken place. The distinction is supported by reconstruction tests. A relative clause is adjoined to the nominal expression that it modifies. For convenience, we will refer to the nominal expression modified by the relative clause as the Head (of the relative construction).

When movement takes place, island conditions must be relevant. We saw in Section 6.1.2 how island conditions constrain topicalization. They apply in exactly the same manner to derive relatives that contain gaps. Indeed, all the examples given in Section 6.1.2 can have the relativization counterpart with identical acceptability judgments, illustrated below.

(82) a. *[wo rensi [henduo [[ei xihuan] de] ren de] na-ge nuhai]
The preposing of \[e_i \text{ baba}\] makes both topic and relative structures acceptable, due to the availability of a properly identified \textit{pro} (the GCR).

\[(84) \text{ [[e_i \text{ baba]} wo kanjian-le de] na-ge nuhai.} \]

‘the girl whose father I saw.’

In brief, relative and topic structures are very much alike with respect to their sensitivity to island conditions. That is, when a gap is present, they exhibit island effects. Even though there are cases where the island conditions appear to be violated, they can be accommodated by the GCR.

The movement derivation is further supported by the relevance of reconstruction effects.\(^{17}\) The following examples show that the reflexive contained in the Head can be interpreted as if it were

\(^{17}\) The following discussion is based on Aoun and Li (2003, chapter 5-6).
inside the relative clause. (85a) shows that the binding of \textit{ziji} ‘self’ by the c-commanding ‘everyone’ is possible. When the expression containing \textit{ziji} is relativized, binding is still possible, as in (85b).

(85) a. wo jiao Zhangsan quan meigeren, de chezi guolai.
    I ask Zhangsan persuade everyone drive self DE car come
    ‘I asked Zhangsan to persuade everyone to drive self’s car over.’

  b. [wo jiao Zhangsan quan meigeren, t guolai de] ziji de chezi.
    I ask Zhangsan persuade everyone drive come DE self DE car
    ‘self’s car that I asked Zhangsan to persuade everyone to drive over’

Reconstruction effects are also exhibited in the following cases containing bound pronouns in a relativized Head. (86a) and (86c) show that the binding of the pronoun by ‘every student’ is possible. (86b) and (86d) illustrate that the relativization of the expression containing the pronoun can still be bound by ‘every student’ inside the relative clause.

(86) a. wo xiwang mei-ge xuesheng, dou neng ba wo gei ta de shu dai
    I hope every-CL student all can BA I give him DE book bring
    lai
    come
    ‘I hope every student can bring the book that I gave to him.’

  b. ni hui kandao [wo xiwang mei-ge xuesheng, dou neng dai t lai
    you will see I hope every-CL student all can bring come
de] wo gei ta de shu].
Relatives containing idioms show the same reconstruction effects. Parts of an idiom can be separated, with one part in the relativized Head position and the rest inside the relative clause.

(87) a. [[\( \text{ta chi e_i de] cu_i] \) bi shei dou da.]
   he eat DE vinegar compare who all big
   ‘Lit: The vinegar he eats is greater than anyone else’s.’
   ‘His jealousy is greater than anyone else’s.’

   b. wo ting-bu-dong [[\( \text{ta you e_i de] mo_i] \) I listen-not-understand he hu- DE -mor
   ‘Lit: I do not understand the -mor that he hu-ed.’
   ‘I do not understand his humor.’

6.2.3. Base generation

In addition to movement, a relative construction can also be base-generated, just like some topic structures. Consider the following examples. An overt pronoun occurs where the Head is interpreted in the relative clause; i.e, the overt pronoun is a resumptive pronoun in the relative clause:

(88) a. wo xiang kan [[\( ni shuo meigeren_j hui dai (*\( ta_i) huilai de] [ziji_j de pengyou]\) i]
   I want see you say everyone will bring him back DE self DE friend
‘I want to see self’s friend that you said that everyone would bring back.

b. *wo xiang kan [[ni shuo meigeren_j hui dai (*ta_i) huilai de [wo I want see you say everyone will bring him back DE I [jieshao-guo gei ta_i de pengyou_i,]]

introduce-GUO to him DE friend

‘I want to see the friend that I have introduced to him that you said everyone would bring back.’

These cases demonstrate that the binding of the anaphor or the bound pronoun contained in the Head by ‘everyone’ within the relative clause is not acceptable when a resumptive pronoun is present.

As expected, the use of a resumptive pronoun renders island conditions irrelevant. A pronoun may occur in contexts inaccessible to movement:

(89) wo xiang kan [[ni [yinwei ta_i bu hui lai] hen shengqi de] [na-ge xuesheng_i].

I want see you because he not will come very angry DE that-CL student

‘I want to see the student that you are angry because he would not come.’

The acceptability of sentences like (89) requires a base-generation strategy to derive the relative construction.

The discussion so far has shown that, just like topic structures, relatives can be derived by movement or base-generation. The two derivations are distinguished by the appearance of a gap vs. a pronoun. When the relativized position inside the relative clause is a gap, the relative is sensitive to
island constraints and exhibits reconstruction effects. When a pronoun replaces the gap, island conditions are irrelevant and reconstruction effects are absent.

6.2.4. Relative operator

Gaps and pronouns are good indications of how a given relative construction is derived. However, there are instances without gaps where movement is still relevant. An example is the relativization of ‘how’ and ‘why’ expressions, as noted by Ning (1993).

Weishenme 'why' and zhenme 'how' have an interesting use in Chinese relatives. They can occur “resumptively” within the relative clause when the Head is yuanyin/liyou 'reason' (which occurs with 'why'), fangfa 'method,' or yangzi 'manner' (the latter two occurring with ‘how’). This contrasts with other wh-words that cannot be used in this manner, such as shei ‘who’ and shenme shihou ‘when.’ The “resumptive” ‘how’ and ‘why’ are optional (i.e., a gap may appear instead).

(90) a. ?ta (ruhe/zenme) xiu che de fangfa, meiren zhidao.
   he how fix car de method nobody know
   ‘Nobody knows the way (how) he fixed the car.’

b. ta (weishenme) bu lai de yuanyin, meiren zhidao.
   he why not come de reason nobody know
   ‘Nobody knows why he fixed the car.’

c. ni kandao ta/*shei, mama de xiaohai
   you see he/who mother de child
‘the child whose mother you saw’

d. *ni zai shenme shihou lai de shihou
you at what time come DE time

‘the time when you came at what time’

A resumptive wh-word inside a relative can be related to the Head noun across clausal boundaries:

(91) a. ¿zhe jiu shi [[ta juede [ni yinggai (ruhe/zenme) xiu che] de] fangfa].
this exactly is he feel you should how fix car DE method
‘This is the way, (how,) he feels you should fix the car ti.’

b. zhe jiu shi [[women yiwei [ta (weishenme) mei lai] de] yuanyin].
this exactly is we thought he why not come DE reason
‘This is the reason, why, we thought he did not come ti.’

However, the distributuion of resumptive wh-words is sensitive to island conditions:

(92) a. *zhe jiu shi [[ruguo ta (weishenme) shengqi ni hui bu gaoxing] de] yuanyin,]
this exactly is if he why angry you will not happy DE reason
‘*This is the reason you will not be happy if he gets angry why’

b. *zhe jiu shi [[ruguo ta (zenme) xiu che] ni hui bu gaoxing] de] fangfa,]
this exactly is if he how fix car you will not happy DE method
‘*This is the way you will not be happy if he fixes cars how’
These facts seem to suggest that movement has applied during the relativization of ‘how’ and ‘why’ relatives (referred to as adjunct relatives), even when these *wh*-words appear inside the relative clause. The movement is sensitive to island conditions. What movement is this, where an apparent “resumptive” *wh*-phrase is allowed? The answer may lie in where movement takes place or what properties characterize *wh*-words in Chinese. The former has to do with the distinction of overt and covert movement. The latter concerns the indeterminate use of *wh*-phrases (see Cheng 1997; Huang 1982b; Kim 1989, 1991; Kuroda 1965; A. Li 1992b; Nishigauchi 1986 Tsai 1994a). The properties of *wh*-words and movement will be the subject of next chapter.

Putting aside the possible alternatives and specific mechanisms, let us entertain the option that the generation of these adjunct relatives involves the movement of an operator equivalent to *why* in English.\(^\text{18}\) That is, these relatives have a structure like (93) in English at some level in the grammar, with the relative operator at the peripheral position of the relative clause.

(93) I heard the reason, [**why**, he would not come here].

That a relative operator is present can be supported by the unacceptability of sentences like the one below, which disallows an interrogative *wh*-phrase inside the relative.

(94) *ta tingdao-le [[ni (weishenme) jiao shei xiu che] de yuanyin]?

he heard-LE you why ask whom fix car DE reason

\(^\text{18}\) The relative containing *the way how* is not quite acceptable in English. Nonetheless, such a relative is still derived by movement of a relative operator.
‘*He heard the reason you asked whom to fix the car?’

The unacceptability of (94) can be captured by a familiar “minimality” effect prominent in the Minimalist Program (Chomsky 1995, for instance). As will be shown in the next chapter, shei needs to be associated with an operator. The linking to an operator generally shows a “minimality” effect: the link has to be the shortest possible (cf. the notion of Attract Closest defined in Chomsky 1995: 296 or the Minimal Binding Requirement in Aoun and Li 1993a). Because the sentence (94) is an interrogative, the wh-phrase is interpreted in the matrix clause. That is, shei should be related to an operator in the matrix clause to make a question (the relevant operator being a question operator). However, the relative operator in the peripheral position of a relative clause intervenes, resulting in unacceptability. (94) minimally contrasts with (95), which does not contain an interrogative wh-phrase and is acceptable:

(95) ta tingdao-le [[ni (weishenme) jiao ta xiu che] de yuanyin].
    he heard-le you why ask him fix car de reason

‘He heard the reason you asked him to fix the car.’

Similar “minimality” effects can be found in (96) and (97), which relativize an argument. The only difference between the (a) sentences in (96) and (97) and the (b) sentences lies in the presence vs. absence of an interrogative wh-phrase in the relative clause.

(96) a.*ta xihuan [[shei dasuan qing ta, lai yanjiang de] zuojiai]?
    he like who plan ask him come talk de author
‘He likes the author that who planned to ask him to come to talk?’

b. ta xihuan [[Zhangsan dasuan qing taₐ lai yanjiang de] zuojia].

‘He likes the author that Zhangsan planned to ask him to come to talk.’

(97) a.*ta yao jian [[shei xiang zhao tamenₐ lai zher de] xueshengₐ]?

‘He wants to see the students that who wants to bring them here?’

b. ta yao jian [[laoshi xiang zhao tamenₐ lai zher de] xueshengₐ].

‘He wants to see the students who the teacher wants to bring here.’

As in the adjunct relative case, such a contrast indicates that the unacceptable sentences contain a relative operator at the peripheral position of the relative clause, which intervenes between the interrogative wh-phrase inside the relative clause and a question operator in the matrix clause.

Importantly, when the resumptive pronoun coindexed with the Head is replaced by a gap, the unacceptable (a) sentences in (96)-(97) become better:

(96) ta xihuan [[shei dasuan qing ∅ₐ lai yanjiang de] zuojia]?

‘He likes the author that who planned to ask him to come to talk?’

(97) ta yao jian [[shei xiang zhao ∅ₐ lai zher de] xueshengₐ]?

‘He wants to see the students that who wants to bring them here?’
Why does such a contrast exist between the cases containing a resumptive pronoun and those with a gap in regard to the “minimality” effect? Note that our minimality account for the (a) sentences in (96)-(97) is based on the presence of a relative operator in the peripheral position of the relative clause. Logically, then, the improvement shown by the (c) sentences is an indication of the absence of the relative operator. This is the analysis proposed by Aoun and Li (2003, Chapters 4-6) on the two types of relative constructions: one type contains a relative operator and the other involves the raising of the relativized nominal to the Head position. The latter is the pattern relativizing an argument (argument relative) and yielding a gap. The former has two constructions: adjunct relatives and argument relatives with a pronoun. Argument relatives with a gap are derived by directly raising the nominal without resorting to a relative operator. Adjunct relatives are not derived by directly raising the relativized phrase: the nominal Head of an adjunct relative must be base-generated. Moreover, as shown earlier, relatives containing a pronoun instead of a gap are not derived by movement, either.

That such a contrast in derivation exists is supported by the differences with respect to reconstruction effects. A Head derived by raising shows reconstruction effects, but a base-generated Head does not. In the (a) cases of (96)-(97), a resumptive pronoun appears and no movement has applied. In the (c) cases, the gap indicates derivation by movement. Accordingly, the former pattern does not show reconstruction effects whereas the latter does. This difference is illustrated by the unacceptability of (98a-b) and the acceptability of (99a-b).

(98) a.*wo xiang kan [[ni shuo meigerei hui dai ta hui-lai de] [ziji de pengyou].]
   I want see you say everyone will bring him back DE self DE friend
‘I want to see self's friend that you said that everyone would bring back.’

b. *wo xiang kan [[ni shuo meigerenj hui dai ta, huilai de [wo
I want see you say everyone will bring him back DE I
jieshao-guo gei ta, de pengyou],]
introduce-GUO to him DE friend

‘I want to see the friend that I have introduced to him that you said everyone would bring back.’

(99) a. wo xiang kan [[ni shuo meigerenj hui dai ∅i huilai de] [ziji de pengyou],].
I want see you say everyone will bring back DE self DE friend

‘I want to see self's friend that you said that everyone would bring back.’

b. wo xiang kan [[ni shuo meigerenj hui dai ∅i huilai de] [wo
I want see you say everyone will bring back DE I
jieshao-guo gei ta, de pengyou],].
introduce-GUO to him DE friend

‘I want to see the friend that I have introduced that you said everyone would bring back.’

The following generalizations emerge:

(100) a. Relatives with a gap in argument positions:

A relative can be derived by directly raising the nominal to be relativized to the Head position.

The Head is related to the trace in an argument inside the relative.

b. Relatives with the Head related to an adjunct or a pronoun in an argument position:
The Head of the relative is base-generated. The Head-relative clause relation is via a relative operator at the peripheral position of the relative clause.

The two types of relatives can be further distinguished by another interesting property: the possibility of a null Head. Relative constructions of the type in (100a) allow the Head to be null but those involving an operator (100b) do not. The following examples illustrate the nominal and adjunct contrast:

(101) a. lai zher de ∅
    come here DE
    `the one that came here`

b. ta zuo de ∅
    he do DE
    `the thing that he did`

c.*ta xiu che de ∅
    he fix car DE
    `the (way) that he fixed the car`

d.*ta likai de ∅
    he leave DE
    `the (reason) that he left`

A null Head in relatives with resumption is not possible:
Note that it is not the case that expressions of *how* and *why* cannot appear in the null form. This prohibition against a null Head is in effect only when a relative clause is present.

(103) a. [[ta xiu che de] fangfa] bi [[wo xiu che de] * (fangfa)] hao.

he fix car DE method compare I fix car DE method good

‘The way he fixes cars is better than the way I fix cars.’

b. [[ta xiu che de] fangfa] bi [[wo de] (fangfa)] hao.

he fix car DE method compare I DE method good

‘The way he fixes cars is better than mine.’

(103a) contrasts with (103b): when the modifier is a nominal phrase, not a relative clause, the modified Head can take a null form. The following examples are further illustrations:
(104) a. [[ta bu neng lai de] yuanyin] wo zhidao le; [[ni bu neng lai de] *(yuanyin)] ne?

he not can come DE reason I know LE you not can come DE reason Q

‘The reason that he cannot come, I know; how about the reason you cannot come?’

b. [[ta bu neng lai de] yuanyin] wo zhidao le; [[ni de] (yuanyin)] ne?

he not can come DE reason I know LE you DE reason Q

‘The reason that he cannot come, I know; how about yours?’

(105) a. ni yinggai ba ta ruhe/zenme, xiu che de *(fangfa) gaosu women.

you should BA he how fix car DE method tell us

‘You should tell us the (way) (how) he fixed the car.’

b. ni yinggai ba ta weishenme, bu lai de *(yuanyin) gaosu women.

you should BA he why not come DE reason tell us

‘You should tell us the (reason) why he fixed the car.’

Because the unacceptable cases are those involving an operator, it is possible that such a contrast is due to some requirement on the relative operator: a relative operator needs to be identified in the sense that some content (restriction) needs to be provided for the operator to be interpreted. A null form does not have enough content to identify the null operator. Alternatively, it is possible to claim that a relative clause is licensed when the relative operator and the Head match in features, including phi-features (person, number etc.) and substantive features such as [human], [place], [time]. However, an empty Head does not have lexical content and does not have these features. In contrast, for relatives derived by directly raising a nominal to the Head position, a null form (not an operator) can be base-
generated and moved there. No operator needs to be identified. A null Head, therefore, is acceptable in such cases.

Summing up, the brief discussion in this section is meant to demonstrate that a relative clause can be derived by directly raising a phrase to the Head position. It may also involve a relative operator in the peripheral position of the relative clause and a base-generated Head. The former always leaves a gap in the relativized position within the relative clause. The latter allows a pronoun or an (optional) “resumptive” adjunct wh. The difference in derivation and the relevance of a relative operator is supported by the interaction with an interrogative wh-phrase inside the relative clause, the presence or absence of reconstruction effects, and the possibility of a null Head.

Relatives are interesting not only in the complexities of their possible derivations but also in the range of structures that they exhibit. For lack of space, we will only briefly discuss in the next section one important aspect of the syntactic representation of relatives.

6.2.5. NP adjunction

We understand that the function of a relative clause is to modify the Head. Structurally, there are many different representations of the relative construction in the literature, and they do not always intuitively capture the modification relation. Two main approaches are (i) an adjunction structure (see Schachter 1973, Vergnaud 1974, for instance) and (ii) a complementation structure (Kayne 1994). An adjunction structure adjoins a relative clause to its Head. If a relative clause appears pre-nominally, it is adjoined

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19 For a more extensive and detailed discussion on the properties and accounts of different types of relatives, see Aoun and Li (2003, Chapters 4-7). Also see O’farli (1994), Munn (1998) and Sauerland (2000, 2003) for the two different derivations discussed in this section. Additionally, Winkler and Schwabe (2003) provide an extensive review.
to the left of the Head (left-adjunction): [\text{NP Relative CP} + \text{Head NP}]. If the relative occurs post-nominally, it is right-adjunction: [\text{NP Head NP} + \text{Relative CP}]. A complementation structure, such as the one proposed in Kayne (1994), takes the relative clause to be the complement of a determiner (D). Such an analysis crucially makes a distinction between NP and DP, to be discussed in Chapter 8. We will jump ahead and bring up the relevant points here.

A determiner such as *the* in English, for instance, heads a functional projection. This is known as a D projection. The D head can take an NP as its complement. A nominal expression such as *the big boy* in English therefore has the structure [\text{DP} [\text{D} \text{the}] \text{NP big boy}]]. In the case of relatives, the functional projection D is subcategorized for a clause, CP, according to Kayne. The Head noun is raised to the Spec of CP:

\[(\text{106}) \text{[DP} \text{D} \text{[CP DP} \text{i} \text{[C [IP ... ei ... ]]]]}\]

According to Bianchi (1999), such a structure is supported by the following generalizations:²⁰

\[(\text{107}) \begin{align*}
\text{i. Because the relative CP is the complement of D, the presence of a relative} \\
\text{CP entails the presence of D.} \\
\text{ii. A selection relation between D and CP exists.} \\
\text{iii. D does not form a constituent with the Head NP, which is in Spec of CP.}
\end{align*}\]

²⁰See Alexiadou, Law, Meinunger, and Wilder (2000) for different approaches to relatives in various types of languages and Aoun and Li (2003, chapter 4) for a summary and the varieties in English.
Without elaborating on the details, we simply focus on (107i) because of its direct implications for the structure of a relative construction in Chinese.

Important facts illustrating (107i) involve coordination structures. Generally, English allows *and* to conjoin DPs, NPs and NPs modified by adjectives.

(108) a. He saw [[an actor] and [a producer]]. ---DP coordination
    b. He is an [[actor] and [producer]]. ---NP coordination
    c. He is a [[great actor] and [brilliant producer]]. ---Adj + NP coordination

However, when a relative clause occurs with a conjunct, the conjunct must contain a determiner, suggesting that what is conjoined must be DPs (see Longobardi 1994).

(109) a.*He is an [[actor that wants to do everything] and [producer that wants to please everyone]].
    b. He is [[an actor that wants to do everything] and [a producer that wants to please everyone]].
    c. He is an [[actor] and [producer]] that wants to please everyone.
    d. He is [[an actor] and [[a producer] that does not know how to produce]].

The contrast between (109a) and (109b) demonstrates the obligatoriness of a determiner when a relative clause occurs. The relative clause in (109c) must modify both of the conjuncts, not just one of the conjuncts. Nonetheless, a relative clause can, in principle, modify only one conjunct. If the

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21 The following discussion is based on Aoun and Li (2003, Chapter 5).
conjunct has a determiner, the modification of that single conjunct is acceptable (109d). These facts support the necessity of a DP projection when a relative clause occurs. However, relatives in Chinese behave differently, as we will soon see.

First, jumping ahead, we assume that Chinese also distinguishes a DP from an NP; a typical nominal expression thus can be expressed as \([DP \text{ Demonstrative } [\text{NumP Number Classifier } [\text{NP } N]]]\) (see Chapter 8). The element following the classifier is an NP. The phrase containing the demonstrative is a DP. When a number and a classifier appear, the projection must be larger than an NP (a NumP or DP). Semantically, a DP is an individual-denoting expression; an NP, property-denoting.

With respect to conjunction, just as English allows the conjunction of two NPs, as in (110), Chinese can do the same, as in (111).

(110) He is a [secretary and typist].

(111) ta shi [mishu jian daziyuan].

\begin{itemize}
  \item he is secretary and typist
  \item ‘He is a secretary and typist.’
\end{itemize}

The expression *secretary and typist* describes the dual roles of one individual. In Chinese, a number and classifier expression *yi-ge ‘one-CL,’* which functions more or less like an indefinite determiner in English, can also occur before the conjunction:

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22 Smith (1964) argues that a relative clause is part of the determiner. Richard Larson (1991) developed the idea further by placing the determiner and the relative clause under one bigger node [NP [Det + Rel Clause]] and the determiner undergoes movement, deriving the word order [Det + NP + Rel Clause].
Further examples illustrate conjunctions describing one individual:

(112) ta shi yi-ge [mishu jian daziyuan].

he is one-CL secretary and typist

‘He is a secretary and typist.’

Relevant to our discussion is the use of the conjunction jian in such examples. In contrast to and in English, which can be used to conjoin like phrases of basically any category, Chinese has a rich set of conjunctions used to connect different types of like categories. For instance, if two individual-denoting expressions are connected, the connector is he or gen, which contrasts with jian, a connector used exclusively to connect two properties pertaining to one individual.

(113) should be contrasted with the following sentences where the conjunction of two individuals requires he/gen and is indicated by the addition of a number+classifier expression to the second conjunct as well as the first.

(113) wo xiang zhao yi-ge [mishu jian daziyuan]. ---one person being sought

I want find one-CL secretary and typist

‘I want to find a secretary and typist.’

(114) wo xiang zhao [yi-ge mishu] he/gen [yi-ge daziyuan].

I want find one-CL secretary and one-CL typist

‘I want to find a secretary and a typist.’
Not only can number+classifier+noun expressions denoting individuals be connected by *he/gen*, but also other individual-denoting expressions such as proper names, pronouns and expressions with demonstratives:

(115) a. wo hen xihuan [[zhe-ge xuesheng] he/gen [na-ge xuesheng]].
   I very like this-CL student and that-CL student
   ‘I like this student and that student.’

   b. wo hen xihuan [[ta] he/gen [Zhangsan]].
   I very like him and Zhangsan
   ‘I like him and Zhangsan.’

Such conjunction of individual-denoting expressions is not possible with *jian*:

(116) *wo xiang zhao [[yi-ge mishu] jian [yi-ge daziyuan]].
   I want find one-CL secretary and one-CL typist
   ‘I want to find a secretary and a typist.’

(117) a. *wo hen xihuan [[zhe-ge xuesheng] jian [na-ge xuesheng]].
   I very like this-CL student and that-CL student
   ‘I like this student and that student.’

   b. *wo hen xihuan [[ta] jian [Zhangsan]].
   I very like him and Zhangsan
   ‘I like him and Zhangsan.’
Jian, as already shown, can be used to connect two properties describing one individual. It can also connect two activities for one individual. That is, it can connect two VPs:

(118) Zhangsan [[nian-shu] jian [zuo-shi]], hen mang.

Zhangsan study and work very busy

‘Zhangsan studies and works; (he is) busy.’

When two clauses are connected, none of the above conjunctions (he/gen/jian) is used. Instead, erqie is used.

(119) a. [[wo xihuan ta] erqie [Zhangsan ye xihuan ta]].

I like him and Zhangsan also like him

‘I like him and Zhangsan also likes him.’

b. [[wo xihuan ta] erqie [Zhangsan hui zhaogu ta]].

I like him and Zhangsan will care him

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23 Two VPs connected by jian express dual activities performed by one person or simultaneous activities. Otherwise, the connector is erqie, which can be used to connect any non-nominal expressions. The conjuncts connected by jian cannot contain aspect markers (or negation or any other functional categories above VP):

(i) *ta nian-zhe/-le/-guo shu, jian zuo-zhe/-le/-guo shi.

he read-PROG/LE/EXP book, and do- PROG/LE/EXP work
‘I like him and Zhangsan will take care of him.’

The function of conjunctions can be summarized below:

(120) a. The connector jian connects two properties of a single individual or two activities performed by one individual. In terms of categories, jian can connect NPs or VPs.\(^{24}\)
b. The conjunction he/gen connects two individual-denoting expressions, i.e, two DPs, which can be proper names, pronouns, expressions containing demonstratives or expressions containing number and classifier expressions.
c. The conjunction erqie connects two non-nominal categories, including clauses, adjective phrases and VPs not expressing dual properties/activities of one individual.
d. These conjunctions are not interchangeable.

The unique distribution of conjunctions provides us with an important test for the categorial status of complex nominals. Suppose that the complementation structure \([DP \ D \ CP]\) advocated by Kayne were an appropriate structure for Chinese relative constructions; then we would expect the conjunction of the relative clause with the Head (excluding D) to be possible with the CP conjunction erqie. This expectation is not met:

\(^{24}\) Such a requirement of jian may have to do with the fact that jian can be a verb meaning doing something simultaneously with another, as indicated by the V-O compound jian-chai 'Jian-job=do part time work, do jobs simultaneously'.
Indeed, such sentences can only be made acceptable by replacing *erqie* with *jian*, the conjunction of dual properties to a single individual. Neither *he* nor *gen* is possible:

(122) *wo xiang zhao yi-ge [[fuze Yingwen de mishu] *jian* [jiao xiaohai de jiajiao]].

I want find one-CL charge English DE secretary and teach kid DE tutor

‘I want to find a secretary that takes care of English (matters) and tutor that teaches kids.’

(123) ??*wo xiang zhao yi-ge [[fuze Yingwen de mishu] *he/gen* [jiao xiaohai de jiajiao]].

I want find one-CL charge English DE secretary and teach kid DE tutor

‘I want to find a secretary that takes care of English (matters) and tutor that teaches kids.’

Not surprisingly, just as (114) is acceptable with *he/gen*, which requires a number+classifier expression in the second conjunct, (123a-b) can be rescued in the same way:

(124) *wo xiang zhao [[yi-ge fuze Yingwen de mishu] *he/gen*

I want find one-CL charge English DE secretary and

\[\text{\textsuperscript{25}}\] Some speakers seem to accept such sentences, especially if the sentences are made more complicated. A remark made by one of such speakers is that they sound “interpretable but not logical” (Bingfu Lu, personal communication).
‘I want to find a secretary that takes care of English (matters) and a tutor that teaches kids.’

The acceptability of (124) is expected since the conjuncts are individual-denoting expressions (DPs).

It is the use of jian in (122) that is significant. Recall that under a complementation approach, a complex nominal in English is always a DP and the category inside D is a CP. However, Chinese relative constructions can only be conjuncts of jian, the NP conjunction, not the CP conjunction erqie, or the DP conjunction he/gen. This suggests that the conjoined categories are NPs, not CPs or DPs.

Indeed, if a complex nominal were always a DP, we would not expect the conjuncts of NP conjunction to contain any relative clause. This contrasts with English, which does require a D for a relative construction. Some of the relevant examples are repeated here:

(125) a. *He is an [[actor that wants to do everything] and [producer that wants to please everyone]].

b. He is [[an actor that wants to do everything] and [a producer that wants to please everyone]].

Summarizing, the contrast between the Chinese (122) and the English (125) clearly argues for the different categorial status of a relative construction in these two languages: it can be an NP in Chinese; but it must be a DP in English. Moreover, because a relative clause can be adjoined to an NP Head
and still be conjoined by the NP-conjunction *jian*, the relative construction should have a left-
adjunction structure $[\text{NP} \quad \text{CP} \quad \text{NP}]$.

A puzzle still remains. Chinese allows a relative clause in at least positions I and III in (126a-
b):

(126) a. Demonstrative + Number + Classifier + Noun  

\begin{array}{ccc}
\text{I} & \text{II} & \text{III} \\
\end{array}

b. Number + Classifier + Noun  

\begin{array}{c}
\text{I} \\
\text{III} \\
\end{array}

What we have suggested only generates a relative clause in position III. How is a relative clause in
position I be derived? It is possible that a relative clause in I is derived by moving the relative clause
in III upward, after the number and classifier expressions are merged with the NP. The motivation for
movement may be (contrastive) focus (see Hsieh 2004, Zhang 2004) or referentiality (Lu 1998).
Readers are referred to these works for detailed discussions.

### 6.3. Gapless structures

To complete the paradigm of relative constructions, we would like to briefly discuss the so-called
gapless relative structures in Chinese --- those without a gap or a resumptive pronoun in the relative
clause. This is illustrated by the following examples:
(127) a. zhe jiu shi [[ta kao-shi de] jieguo]
    this exactly is he take-exam DE result
    ‘This is the result of his exam-taking.’

b. zhe jiu shi [[ta chang-ge de] shengyin]
    this exactly is he sing-song DE voice
    ‘This is his singing voice.’

c. zhe jiu shi [[ta zuo-e de] houguo]
    this exactly is he do-evil DE consequence
    ‘This is the consequence of his evil-doings.’

d. zhe jiu shi [[ta sha zhe-ge xiaohai de] jigma]
    this exactly is he kill this-CL child DE price
    ‘This is the price for him killing the child.’

In such instances, the relative Head cannot be related to any position within the relative clause. Most importantly, such relative clauses are much more limited. The Head noun must be related to the entire relative clause; it cannot be merely related to an embedded clause within the relative. Therefore, (128a) is not acceptable because ‘the voice’ is unable to be related to the embedded clause. Neither is (128b) acceptable because the consequence is unable to be related to the embedded clause.

(128) a.*zhe jiu shi [[wo xihuan [ta chang-ge de] shengyin]
    this exactly is I like he sing-song DE voice
    ‘This is the voice of my liking him singing.’

b. *zhe jiu shi [[wo ting-shuo [ta zuo-e de] houguo]
This exactly is I hear-say he do-evil DE consequence

'This is the consequence of my hearing him do evil.'

This type of "relative clause" may not be the typical relative clause with which we are familiar. More precisely, this pattern, rather than being a counterpart of the English [Head + Relative clause], is more like a Head noun with a preposition and XP (a PP) in English, such as [the price [for him killing the boy]], [the sound [of his singing]], [the consequence [of his evil doings]]. Just like these English cases where the entire PP bears a direct modification relation to the Head noun, the Head noun in (127)-(128) must also be modified by the entire "relative clause," rather than a subpart of it (such as an embedded clause, as in (128)).

(128)a-b) can be contrasted with (129a-b), which also contain embedded clauses but are acceptable. They are acceptable because the voice is related to the voice of my imagination (of his singing) and the consequence is related to my liking him to do evil:

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26 It is not surprising that the Chinese counterpart of the English [NP [P XP]] is [XP de NP]. The prepositions in question are generally quite empty: the result of his exam, the consequence of his evil doing etc. Chinese rarely uses such empty prepositions within nominal expressions (except for dui, which occurs with some complements). Chinese always has modifiers to the left of N, in contrast to English, which may have modifiers to the right of N. De appears after a modifier within a Chinese nominal expression. See Fu (1994) for relevant discussions.

27 Murasugi (1991) notes a locality condition on "gapless" relative clauses in Japanese, which is similar to the one for Chinese.
These properties of the so-called gapless relatives lead us to propose that they are in fact not relatives, but rather *complements* of the nouns that follow them. The nouns in each case are used in their relational sense where their denotations do not exist independently. Thus a ‘consequence’ (*houguo*) does not exist by itself, but only as a consequence of something. Similarly, a *jiama* ‘price’ does not exist by itself, but only as a price of something. This is similar to nouns denoting ‘inalienable possessions’ like *baba* ‘father’, *didi* ‘younger brother’, and *jiao* ‘foot’ (kinship terms and body parts). Under this view, a ‘gapless relative’ is in fact an argument of the head noun. Since it is not a relative, no gap is expected.